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*Form Approved
OMB No. 0704-0188*

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1. REPORT DATE (DD-MM-YYYY) Spring 2009			2. REPORT TYPE Research		3. DATES COVERED (From - To) Dec 2008-Mar 2009	
4. TITLE AND SUBTITLE "Ground-breaking Study Confirms Army Morale, Welfare and Recreation Programs Linked to Soldier Readiness and Retention," <u>U.S. Army Journal of Installation Management</u> , 4 (Spring 2009) 28-33.			5a. CONTRACT NUMBER N/A			
			5b. GRANT NUMBER N/A			
			5c. PROGRAM ELEMENT NUMBER N/A			
6. AUTHOR(S) Richard J. Fafara, Joanne C. Marshall-Mies, David J. Westhuis			5d. PROJECT NUMBER N/A			
			5e. TASK NUMBER N/A			
			5f. WORK UNIT NUMBER N/A			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) IMCOM, IMWR-ZA, San Antonio, TX 78234			8. PERFORMING ORGANIZATION REPORT NUMBER N/A			
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Installation Management Command IMWR-ZA, San Antonio, TX 78234			10. SPONSOR/MONITOR'S ACRONYM(S) IMCOM			
			11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A			
12. DISTRIBUTION / AVAILABILITY STATEMENT						
Public availability						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT The study found a statistically significant, positive, direct and indirect link between active duty Soldiers' use of MWR Programs and their Desire to Stay in Army. Moreover, these links also held true for program use by the spouses of active duty Soldiers. The study successfully measured the strength of the links to morale, retention and readiness in terms of overall program use and, more precisely, by four distinct groups of MWR programs (Recreation, Tour & Travel, Library Programs and Services; Child and Youth Programs and Services; Sports and Fitness Programs; and Food and Beverage Operations). In addition, this research uncovered an indirect link between Soldier use of MWR and their emotional attachment to the Army and perceptions that MWR programs indicate that the Army cares about Soldiers and their Families. Of particular note is the finding that readiness and retention increase as MWR program use increases. The study focused on data from two Army-wide surveys of Soldiers and two of spouses, containing responses from more than 25,000 Soldiers and 23,000 spouses. The researchers determined whether <i>statistical significance</i> existed between program use and the readiness and retention outcomes and then measured the <i>strength ("effect size")</i> of the associations.						
15. SUBJECT TERMS Morale, Welfare and Recreation; MWR; Family Support Programs; Child and Youth Services; Sports and Fitness; Readiness; Retention						
16. SECURITY CLASSIFICATION OF: Unclassified Unlimited			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 6	19a. NAME OF RESPONSIBLE PERSON Dr. Richard Fafara	
a. REPORT			b. ABSTRACT	c. THIS PAGE	19b. TELEPHONE NUMBER (include area code) 571-256-8146	

Ground-breaking Study Confirms Army Morale, Recreation and Welfare Programs Directly Linked to Soldier Readiness and Retention

By Richard J. Fafara, Joanne C. Marshall-Miles and David J. Westhuis

(Note: When the data collected from survey respondents are adjusted to represent the entire population from which the sample was drawn, the resulting data are called weighted data.) The Soldier and spouse samples for each of the surveys mirror the Army population based on the rank of the Soldier and Soldier spouse, with four-fifths being enlisted or civilian spouses of enlisted and one-fifth being officers or spouses of officers. These samples also mirror the Army population in terms of their gender, racial/ethnic diversity, station locale (within or outside of the Continental United States), and location of residence (on- or off-post).

Measures. Five MWR usage, three readiness and retention (referred to as "outcomes"), and two intervening measures were developed.

a. **MWR Usage.** The MWR usage measure reflected the number of MWR programs/services used by the respondents (hereafter referred to as "MWR use"). This varies slightly by survey. For the SSMP and SAF V, the total MWR score indicated how many of 23 MWR programs the Soldier or spouse had used within the last 2 years. For the LNS, a comparable measure indicated how many of 16 MWR programs they had used in the last 12 months. In addition, separate measures reflected the use of four different groups of MWR programs: Child and Youth Services (for those Soldiers and spouses with dependent children); Recreation, Tickets and Libraries (including information and tickets, music and theater programs, arts and crafts, automotive shop, travel agency, services, outdoor, recreation, and community centers); Sports and Fitness Programs; and Food and Beverage Operations (for SSMP and SAF V only).

b. **Retention and Readiness.** Three

Although civilian literature has established the positive role of leisure as a form of coping and dealing with stress, only recently has the Army been able to demonstrate a similar impact of Army Morale, Welfare and Recreation (MWR) programs by scientifically linking them to the readiness and retention of active-duty Soldiers. A study, initiated by the U.S. Army Family and Morale, Welfare and Recreation Command (FMWRC), found significant statistical relationships between active-duty Soldiers' use of recreation and Family programs and their desire to stay in the Army, their military career intentions, and their satisfaction with Army life. Moreover, the study was able to measure the strength of those relationships. Very similar relationships held true of MWR program use by civilian spouses of active-duty Soldiers. The study also provided details about the strength of the relationships between MWR usage within four distinct groups of MWR programs, as well as characteristics of users, and Soldier readiness and retention.

METHODOLOGY

Sample Description. Using Soldier and spouse data from three robust, Armywide surveys, this study analyzed responses from more than 25,000 active-duty Soldiers and 22,000 civilian spouses of active-duty Soldiers. For Soldiers, the study used data from the Spring 2005 Sample Survey of Military Personnel (SSMP) and the 2005 Leisure Needs Survey (LNS). Spouse data came from the 2004/2005 Survey of Army Families V (SAF V) and the LNS. All data was weighted to the total population of approximately 400,000 non-deployed, active-duty Soldiers and approximately 180,000 civilian spouses of non-deployed, active-duty Soldiers.

Army retention and readiness outcome measures were developed:

- (1) "desire to stay in the Army" until retirement or to make the Army/military a career vs. "desire to leave the Army before retirement"
- (2) "military career intentions" or plans to stay in the Army/military until retirement/make it a career vs. stay beyond obligation but not until retirement vs. leave after obligation/ not make it a career
- (3) "satisfaction or dissatisfaction with Army life."

Because of the richness of the datasets, this article will present findings for only one outcome variable: "desire to stay in the Army." However, throughout the study, results found for the other outcome variables (i.e., "military career intentions" and "satisfaction with Army life") paralleled the results reported herein for the outcome variable, "desire to stay in the Army."

c. Intervening Variables. Two intervening or mediating variables were analyzed. These two intervening variables were found to enhance the relationship between MWR usage and the outcome variables. The first intervening variable, "emotional attachment," summarizes the extent to which SSMP Soldiers agree or disagree with four statements about their current military life: I feel like "part of the family" in the military. The military has a great deal of personal meaning for me; I feel a strong sense of belonging to the military; and I feel "emotionally attached" to the military. A second intervening variable, "extent the Army cares," summarizes LNS Soldiers responses to the question: To what extent does providing MWR programs and services demonstrate that the Army cares about you and your family?

First, it was determined if there was a statistically significant relationship between MWR use, retention and readiness, and the intervening variables. In general, statistical significance indicates how sure one can be that the relationship between the number of MWR programs used and other variables (i.e., the readiness and retention and the intervening variables) is due to chance or is a finding that can be consistently replicated. However, because of the way statistical significance is computed when a sample size is large (e.g., the study samples of more than 25,000 Soldiers and 22,000 spouses), even very small relationships will be detected as statistically significant. This does not necessarily mean that the

following standards: an ES greater than or equal to .80 constituted a strong or large relationship (correlation); .50 to .79, a medium relationship; .21 to .49, a moderate relationship; and below .21, a small relationship (Rubin & Babble, 2005). See the examples in Figure 1.

RESULTS

The study results described below demonstrate: the direct relationships and ES of MWR use on retention and readiness outcomes, the ES of MWR use on outcomes via intervening variables, ES of different types of MWR programs on outcomes, and ES of demographics on MWR use.

Direct Relationships and ES of MWR Use on "Desire to Stay in the Army Until Retirement."

The study found a statistically significant relationship (i.e., correlation) between MWR usage and the "desire to stay in the Army." These Soldier and spouse correlations indicate that, as MWR usage increases, "desire to stay in the Army" increases. The study also found direct, positive ES between Soldiers' MWR usage and "desire to stay in the Army." The direct ES (.21 to .36) for these correlations, shown in Figure 2, are moderately strong for Soldiers and spouses. These ES, in turn, increased significantly via the indirect

relationship is "large" or important enough to warrant the attention of policy makers or program managers; it only means that the relationship is most likely not due to chance. After establishing that a significant relationship exists, a second analysis step assessed the strength ("Cohen's d" or "effect size") of the relationship. Cohen's d or effect size (ES) is a name given to a family of standardized indices (Cohen, 1988) that measure the strength or magnitude of the relationship (correlation) between variables. It is independent of the sample size. The larger the ES, the greater the importance or strength of the relationship. As you read the following results, it is important to keep in mind that the ES does not indicate that there is a causal relationship between the two variables; rather, it indicates the magnitude of the correlation or the strength of the relationship between the two variables.

MWR PROGRAM USAGE



Figure 2: ES of MWR Program Use on "Desire to Stay in Army until Retirement"

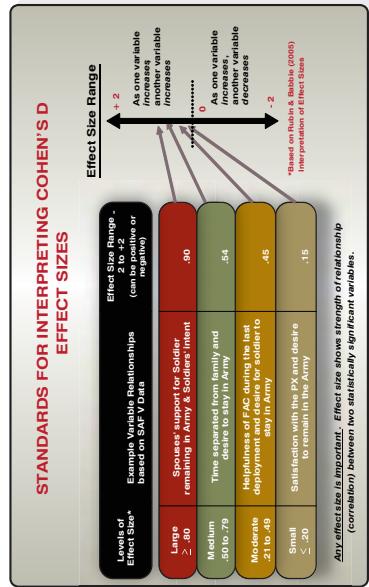


Figure 1: Standards for Interpreting Effect Size (ES) (Rubin & Babble, 2005)

Responses to this question ranged from a great extent to no extent. Both variables were found to be directly related to MWR use and, in turn, had an indirect and direct impact on the outcomes.

Analysis.

The statistical analysis involved two steps. First, it was determined if there was a statistically significant relationship between MWR use, retention and readiness, and the intervening variables. In general, statistical significance indicates how sure one can be that the relationship between the number of MWR programs used and other variables (i.e., the readiness and retention and the intervening variables) is due to chance or is a finding that can be consistently replicated. However, because of the way statistical significance is computed when a sample size is large (e.g., the study samples of more than 25,000 Soldiers and 22,000 spouses), even very small relationships will be detected as statistically significant. This does not necessarily mean that the

Samples	Direct ES (MWR Use on Desire to Stay in the Army)	Indirect ES (MWR Use on Int. Var. X (Int. Var. on Desire))	Total ES (Direct ES + Indirect ES)
For SSMP Soldiers. Intervening Variable = Emotional Attachment	.21	.33	.54
For LNS Soldiers. Intervening Variable = Extent Army Cares	.31	.35	.62

Table 1: ES of Soldiers' MWR Use on "Desire to Stay in the Army" via "Emotional Attachment" and "Extent the Army Cares"

range. The total ES of MWR usage on "desire to stay in the Army" via "emotional attachment" (direct + indirect ES) was .54, which is of medium strength. The ES for the indirect paths for MWR usage via "extent the Army cares" on "desire to stay in the Army" (.21) was in the moderate range. The total ES of MWR usage on "desire to stay in the Army" via "extent the Army cares" (direct + indirect ES) was .52, which is of medium strength.

These analyses indicate that the association of MWR use via "emotional attachment" and "extent the Army cares" on "desire to stay in the Army" is small for Child and Youth Services, the direct and indirect ES of MWR usage association with "desire to stay in the Army" via "emotional attachment" and "extent the Army cares," and "desire to stay in the Army." It also shows the direct ES of "emotional attachment" and "extent Army cares" on "desire to stay in the Army" via "emotional attachment" and "extent the Army cares," and "desire to stay in the Army." For LNS Soldiers, the direct ES of MWR usage on "desire to stay in the Army" (.21) and on "emotional attachment" (.37) indicate a moderately strong association; whereas, the "emotional

attachment" direct ES on "desire to stay in the Army" (.90) suggests a large relationship. Similarly, for LNS Soldiers, the direct ES of MWR usage on "desire to stay in the Army" (.31) and "extent the Army cares" (.35) indicate moderately strong associations; this compares with the direct ES of "extent the Army cares" on "desire to stay in the Army" (.61), which suggests a medium relationship. Thus, MWR usage has a positive, significant association (ES) with "emotional attachment" and "extent Army cares" and, indirectly, it has a positive association with "desire to stay in the Army" via "emotional attachment" and "extent the Army cares."

Figure 4 summarizes the ES for the direct relationships between Soldiers' usage of MWR and "emotional attachment," "extent Army cares," and "Desire to Stay in the Army." Table 1 shows the direct ES of "emotional attachment" and "extent Army cares" on "desire to stay in the Army" via "emotional attachment" and "extent the Army cares." The ES for the indirect paths for MWR usage via "emotional attachment" on "desire to stay in the Army" was in the moderate range; whereas, the direct ES for use of Food and Beverage services is in the moderate range.

Figure 4 summarizes the ES for the direct relationships between Soldiers' usage of MWR and "emotional attachment," "extent Army cares," and "Desire to Stay in the Army." Table 1 shows the direct ES of "emotional attachment" and "extent Army cares" on "desire to stay in the Army" via "emotional attachment" and "extent the Army cares." The ES for the indirect paths for MWR usage via "emotional attachment" on "desire to stay in the Army" was in the moderate range; whereas, the direct ES for use of Food and Beverage services is in the moderate range.

association (ES) of "emotional attachment" and "extent the Army cares" with "desire to stay in the military."

Similar significant correlations and ES results were found for MWR use

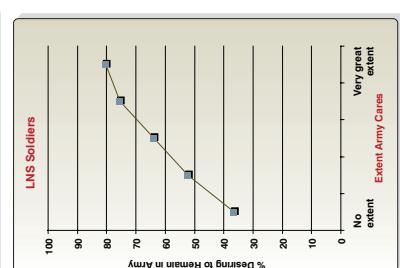
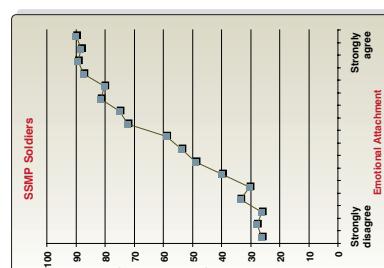


Figure 3: Relationship of "Emotional Attachment" and "Extent Army Cares" to "Soldier's Desire to Stay in the Army"

Figure 4: Direct ES of Soldier's MWR Use on "Emotional Attachment" to the Army and "Extent the Army Cares" and on "Desire to Stay in the Army"

Figure 5: Direct ES of Use of Different Types of MWR Programs on Soldiers' Desire to Stay in the Army Until Retirement

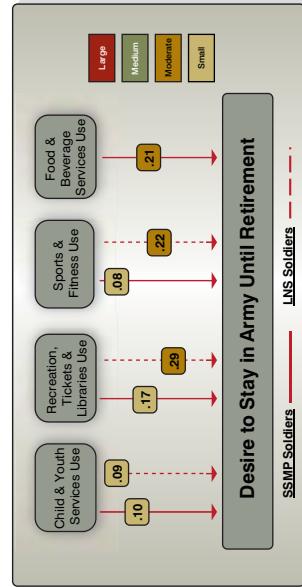


Figure 5: Direct ES of Demographics on MWR Use. The analyses found a significant relationship and small to large ES between MWR use and several demographic variables,

Types of MWR Programs	Direct ES (MWR Use on Desire to Stay in the Army)		Indirect ES (MWR Use on Int. Var. X Int. Var. on Desire to Stay in the Army)		Total ES (Direct ES + Indirect ES)	
For SSMP Soldiers; Child & Youth Services	.10				.21	
Recreation, Tickets and Libraries	.17	+			.50	
Sports and Fitness	.08	+			.32	
Food and Beverage Services	.21	+			.51	
For DANS Soldiers; Child & Youth Services	.09				.18	
Recreation, Tickets & Libraries	.29	+			.50	
Sports & Fitness	.22	+			.44	

Table 2: ES of Soldiers' MWR Use on "Desire to Stay in the Army" via the Intervening Variables

indicating that the more frequent users of MWR programs are:

- Officers compared to enlisted Soldiers
- Field grade officers compared to company grade and warrant officers
- Senior enlisted and enlisted compared to junior enlisted personnel
- Those living on-post and outside of the continental United States (OCONUS) compared to those living off-post and in the continental United States (CONUS).

IMPLICATIONS AND CONCLUSION

The study findings constitute a major step forward in providing the Army, scientifically valid results for answering questions such as, "What is the value of Morale, Welfare, and Recreation (MWR) programs?" and "Should MWR programs be continued?" These findings reveal strong, positive associations (ES) between Soldiers' and spouses' use of MWR

important role in designing future research to assess the impact of these programs over time. For example, the finding that MWR programs are used less frequently by company grade officers and junior enlisted Soldiers and their spouses and by Soldiers and spouses who live off-post and in CONUS suggests that MWR programs could be of even more benefit to Army readiness and retention if they were made more accessible and tailored to better meet the needs of specific Army subpopulations. In this era of increased emphasis on the Total Army (all components), the study also signals the need for a holistic assessment of MWR by studying how MWR programs and services available not only to active duty but also to reserve components contribute to readiness and retention.

Maj. Gen. John Macdonald, past commander of FMWRC, summarized the study as follows: "What is important," he said, "is being able to demonstrate scientifically to a variety of audiences that the MWR programs we have in place make a difference, and knowing that we can strengthen Soldier readiness and retention by increasing use of MWR. This translates into doing two things: increasing awareness of these programs and ensuring through additional research that current and future MWR programs continue to effectively meet the needs of Soldiers and their Families."

Additional information on this study including a detailed briefing and technical article are available at: <http://www.armymwr.biz/research.htm>.

The study findings also provide important baseline data that will help inform MWR policy, resource, and marketing decisions and play an

experience at Headquarters Department of the Army, have been devoted to a variety of research and strategic planning efforts that included: serving on the MWR Modernization Task Force; coordinating the Army Chief of Staff's Soldier Issue Forum; and managing psychosocial, behavioral research and evaluation, especially as it relates to developing action-reaction programs, Army Families, and their quality of life. Dr. Fafara completed the Senior Executive Fellows Program at Harvard University and the Army Management Staff College Sustaining Base and Leadership Program. An alumnus of Seton Hall University, she holds a Master of Arts and Doctorate in Philosophy from the University of Toronto and completed graduate studies at the University of Paris and post-doctoral studies at the Polish Academy of Sciences in Warsaw, Dr. Fafara has taught at The George Washington and Northern Virginia Community College, and Northern Virginia Community College.

Joanne Marshall-Mies is president and director of research at Swan Research Inc. She is an industrial and organizational psychologist, with a Master's degree in Psychology from Wake Forest University and has more than 25 years experience in the management and direction of human resources and survey research. Over the last decade, she has directed research in support of public and private sector organizations, including the Sample Survey of Military Personnel (SSMP) and Survey of Army Families (SAF). Dr. David Westhuis has more than 36 years of practice experience as a master and doctorate level social worker in civilian and military settings. He retired from the U.S. Army in 1994 as a lieutenant colonel in the Medical Service Corps. During his military career he served as an infantry officer during Vietnam, instructor at the U.S. Army Academy of Health Sciences, social worker at various military facilities, and coordinator of primary research that was done on the military Family during the first Gulf War. Subsequent to his military career, he has been a professor at two Indian universities and currently is the executive director of the 900-student

Master of Social Work Program at Indiana University. His areas of teaching expertise are program evaluation, practice evaluation, leadership and administration, Family and marital therapy, and group therapy. He has continued his military research during his tenure as a professor at Indiana University and the University of Southern Indiana. Indiana. He has been a senior research fellow with the U.S. Army Research Institute for the last six years and has done multiple presentations and publications on military Family issues.

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Richard Fafara is senior research analyst in the Marketing Directorate, Family and MWR Command. His more than two decades of